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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,173

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Zhisheng Deng

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P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BLOUIN, MARK S

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

03/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,173	DENG ET AL.	
	Examiner	Art Unit	
	MARK BLOUIN	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/19/08</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Amendment

- The reply filed on January 23, 2009 was applied to the following effect: Claim 1 was amended, Claim 12 was cancelled, and Claims 13 and 14 were added.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 8-11, 13, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang (US 7,099,114).
3. Regarding Claims 1,13, and 14, Kang shows (Fig. 8b) a head slider which has a head part and which performs at least one of recording and reproducing by the head part in a state in which the head slider floats over a recording medium, which comprising: a first air bearing part (250) which is disposed on an air inflow end side on a base surface; a second air bearing part (160) which is disposed closer to an air outflow end side than the first air bearing part on the base surface and which has the head part and has an area smaller than that of the first air bearing part; a pair of positive pressure generating parts (252) which is disposed on both sides of a center axis of the head slider in the longitudinal direction closer to the air outflow end side than a step part formed between the first air bearing part and the base surface on the air inflow end side; a side

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rail parts (the rail part between 251 and 252) which are disposed between the first air bearing part and one positive pressure generating part of the pair of positive pressure generating parts, and between the first air bearing part and the other positive pressure generating part of the pair of positive pressure generating parts; and an outside side rail parts (outside hook portion of part 252) which are disposed outside the pair of positive pressure generating parts with respect to the center axis of the head slider in the longitudinal direction, wherein a formation formed by one of the side rail parts, one of the outside side rail parts and one of the pair of positive pressure generating parts is open-ended to the air inflow end side and inner planes of the outside side rail parts are disposed outside the first air bearing part with respect to the center axis of the head slider in the longitudinal direction.

4. Regarding Claim 2, Kang shows (Fig. 8b) the head slider, further comprising: a first step part (120) which is disposed between the base surface (112) and the first air bearing part (250); and a second step part (130) which is disposed between the base surface and the second air bearing part.

5. Regarding Claim 3, Kang shows (Fig. 8b) the head slider, wherein a negative pressure generating part (140) is provided in an area surrounded by the first air bearing part, the second air bearing part, and the side rail parts.

6. Regarding Claim 4, Kang shows (Fig. 8b) the head slider, where in the first air bearing part (250), the second air bearing part (130), the side rail parts, the outside side rail parts (the rail part between 251 and 252) and the pair of positive pressure generating parts (252) are formed at the same height from the base surface.

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7. Regarding Claim 5, Kang shows (Fig. 8b) the head slider, wherein the first step part (120) and the second step part (130) are formed at the same height from the base surface.

8. Regarding Claim 8, Kang shows (Fig. 8b) a head support unit comprising: the head slider; and a suspension which applies a predetermined thrusting force with respect to the head slider from a side opposite to a side on which the first air bearing part and the second air bearing part are disposed on the base surface.

9. Regarding Claim 9, Kang shows (Fig. 1) the head support unit, wherein the suspension (34) has a pivot part which applies the predetermined thrusting force with respect to the head slider (32).

10. Regarding Claim 10, Kang shows (Fig. 1) a disk drive apparatus comprising: the head support unit (30); a disk-shaped recording medium (10); a drive part (20) which rotates and drives the disk-shaped recording medium; a rotating part (36) which rotates the suspension of the head support unit in a radial direction of the disk-shaped recording medium; and a control part (actuator) which controls the rotation and drive of the drive part and the rotation of the rotating part.

11. Regarding Claim 11, Kang shows (Fig. 8b) the disk drive apparatus, wherein the suspension of the head support unit has a pivot part (36) which applies a predetermined thrusting force with respect to the head slider (32); wherein when a position at which the pivot part is abutted against the head slider is set to a pivot position, the position of the center of gravity and the pivot position of the head slider projected onto the disk-shaped recording medium are matched with each other.

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12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang (US 7,099,114).

14. Regarding Claims 6 and 7, Kand shows (Fig. 8b) all the features described, *supra*, but does not show, wherein distance D2 in the longitudinal direction from the air inflow end of the head slider to the step part of the first air bearing part satisfies a relationship below where a length of the head slider in the longitudinal direction is DT: $0.47 \leq (D1/DT) \leq 0.66$ or $0.18 \leq (D2/DT) \leq 0.35$

Kang does not set forth the dimensions in these claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Kang with the claimed dimensions through routine experimentation and optimization in the absence of criticality. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239 70 USPQ 412; *Minnesota Mining and Mfg. Co. v Coe*, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213; *Allen et al. v Coe*, 77 App. D.C. 324, 135 F. 2d 11, 57 USPQ 136.

Response to Arguments

15. Applicant's arguments filed January 7, 2009 have been fully considered but they are not persuasive. The Applicant asserts on page:

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A marked-up copy of Fig. 8A of Kang, the cited prior art reference, is attached to this amendment as an exhibit. As shown, air flow does not reach a portion of Kang which is analogous to Applicants' positive pressure generating parts. Rather, because of the configuration of Kang, air flows past any structure which could arguably be analogous to Applicants' positive pressure generating part.

The Examiner Maintains that Kang shows a structure that anticipates the applicant's invention including a first air bearing part (250), a second air bearing part (160), a pair of positive pressure generating parts (252), side rail parts (the rail part between 251 and 252), and outside side rail parts (outside hook portion of part 252). The Examiner respectfully disagrees that airflow does not reach Kang's pair of positive pressure generating parts (252). The entire bottom surface of Kang's slider is exposed to the airflow that is generated by the spinning disk.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is 571-272-7583. The examiner can normally be reached on M-F from 6:00 to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joe Feild, can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Mark Blouin/

Primary Examiner of Art Unit 2627

Mark Blouin
Patent Examiner
Art Unit 2627
March 5, 2009